

STATE OF TENNESSEE DEPARTMENT OF HEALTH **ENVIRONMENTAL LABORATORIES**

TDH: Lab Services JRL Lab Services - Jackson Regional Lab Jackson, TN 38301 731-426-0686

TDH: Lab Services KRL Lab Services - Knoxville Regional Lab Knoxville, TN 37920 865-549-5201

TDH: Lab Services NCL Lab Services - Nashville Central Lab Nashville, TN 37243 615-262-6300

Sent To:

Geoff Klein **TDEC-DWS**

200 East Race St Knoxville, TN 37763

N00003972 Lab ID: Nashville Central Laboratory

Sampling Agency: TDEC: Division of Water Supply

Billing Code:

327.39-12

This is to certify that the following results were determined using good laboratory pratices and in accordance with federal or state approved methodologies.

N00003972001

Project Name:

Sample Description:

KINGSTON WTP

Sampler Project Name: FINISH

Project Site No.:

Station No.:

Date/Time Collected:

01/09/2009 09:50

Sampler's Name:

GEOFF KLEIN

County:

ROANE - 73

Sample Matrix: EFO:

Water

Sampling Agency:

Knoxville

Billing Code:

TDEC-DWS 327.39-12

Send Report To: Agency Invoiced:

TDEC-DWS

Priority Date:

TDEC-DWS

Date/Time Received:

01/09/2009

14:30

RESULT

43

ANALYTE

Total Alkalinity

TEST: Alkalinity, Total	METHOD: EPA 310.2
1.000.10d by.	
Received By:	L Barroclere

UNITS

mg/L

Field Determinations

Chlorine, residual:

Dissolved Oxygen:

MQL

10

ANALYZED BY:

S Burchfield

CFS

DATE

1/10/2009

Conductivity:

Temperature:

:Ha

Other:

Flow:

MDL

3.8

TEST: Hardness, Calcium	WE.	THOD: SM 350	0-Ca D			
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Calcium hardness	36	mg/L	0.7	1	S Burchfield	1/10/2009

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

N00003972002

Project Name:

Sample Description:

KINGSTON WTP

Sampler Project Name: RAW

Project Site No.:

Station No.:

Date/Time Collected:

01/09/2009 09:55

Sampler's Name:

GEOFF KLEIN

County: Sample Matrix:

ROANE - 73

EFO:

Water Knoxville

Sampling Agency:

Knoxville TDEC-DWS

Billing Code: Send Report To: 327.39-12 TDEC-DWS

Agency Invoiced:

TDEC-DWS

Priority Date:

Date/Time Received:

01/09/2009

14:30

Received By:

L Barrociere

pH: Chlorine, residual:

Field Determinations

Conductivity:
Temperature:
Dissolved Oxygen:

Other: Flow:

CFS

TEST: Alkalinity, Total	METHOD: EPA 310.2						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE	
Total Alkalinity	44	mg/L	3.8	10	S Burchfield	1/10/2009	

EST: Hardness, Calcium METHOD: SM 3500-Ca D						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Calcium hardness	36	mg/L	0.7	ĺ	S Burchfield	1/10/2009

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

N00003972003

Project Name:

Sample Description:

ROCKWOOD WTP

Sampler Project Name: RAW

Project Site No.: Station No.:

Date/Time Collected:

01/09/2009 11:00

Sampler's Name:

GEOFF KLEIN

County:

ROANE - 73

Sample Matrix: EFO:

Water

Sampling Agency:

Knoxville

Billing Code:

TDEC-DWS 327.39-12

Send Report To:

TDEC-DWS TDEC-DWS

Agency Invoiced: **Priority Date:**

Date/Time Received:

01/09/2009 14:30

Received By:

L Barrociere

Field Determinations

pH:

Chlorine, residual: Conductivity: Temperature:

Dissolved Oxygen:

Other:

Flow:

CFS

TEST: Alkalinity, Total	ME.		***			
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Total Alkalinity	68	mg/L	3.8	10	S Burchfield	1/10/2009

TEST: Hardness, Calcium	ME	THOD: SM 350				
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Calcium hardness	51	mg/L	0.7	1	S Burchfield	1/10/2009

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

N00003972004

Project Name:

Sample Description:

ROCKWOOD WTP

Sampler Project Name: FINISH

Project Site No.:

Station No.:

Date/Time Collected:

01/09/2009 11:05

Sampler's Name:

GEOFF KLEIN

County: **Sample Matrix:** **ROANE - 73**

EFO:

Water Knoxville

Sampling Agency:

TDEC-DWS

Billing Code: Send Report To: 327.39-12 TDEC-DWS

Agency Invoiced:

TDEC-DWS

Priority Date:

Date/Time Received:

01/09/2009

14:30

Received By:

L Barrociere

Field Determinations pH:

Chlorine, residual: Conductivity: Temperature: **Dissolved Oxygen:**

Other: Flow:

CFS

TEST: Alkalinity, Total	METHOD: EPA 310.2					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Total Alkalinity	60	mg/L	3.8	10	S Burchfield	1/10/2009

TEST: Hardness, Calcium	dness, Calcium METHOD: SM 3500-Ca D						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE	
Calcium hardness	52	mg/L	0.7	1	S Burchfield	1/10/2009	

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit



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TDH: Lab Services KRL Lab Services - Knoxville Regional Lab Lab Services - Nashville Central Lab Knoxville, TN 37920 865-549-5201

TDH: Lab Services NCL Nashville, TN 37243 615-262-6300

Sent To:

Geoff Klein

TDEC-DWS 200 East Race St Knoxville, TN 37763 Lab ID: N00003972

Nashville Central Laboratory

Sampling Agency: TDEC: Division of Water Supply

Billing Code:

327.39-12

This is to certify that the following results were determined using good laboratory pratices and in accordance with federal or state approved methodologies.

Analytical Supervisor

N00003972001

Project Name:

Sample Description:

1: KINGSTON WTP

Sampler Project Name: FINISH

Project Site No.:

Station No.:

Date/Time Collected:

01/09/2009 09:50

Sampler's Name: County: GEOFF KLEIN ROANE - 73

Sample Matrix:

Water

EFO: Sampling Agency:

Knoxville TDEC-DWS

Billing Code: Send Report To: Agency Invoiced: 327.39-12 TDEC-DWS TDEC-DWS

Priority Date:

Date/Time Received:

01/09/2009 14:30

Received By:

L Barrociere

Field Determinations

pH:

Chlorine, residual: Conductivity: Temperature: Dissolved Oxygen:

Other: Flow:

CFS

TEST: Digestion Metals METHOD: EPA 200.2						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Digestion Metals	01/10/2009				A Wilson	1/10/2009

TEST: ICP-MS	ME					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Arsenic	U	μg/L	0.93	5	A Wilson	1/10/2009
Barium	17	μg/L	2.5	5	A Wilson	1/10/2009
Beryllium	U	μg/L	0.11	1	A Wilson	1/10/2009
Cadmium	U	μg/L	0.41	1	A Wilson	1/10/2009
Chromium	U	μg/L	2.0	5	A Wilson	1/10/2009
Cobalt	0.08J	μg/L	0.04	1	A Wilson	1/10/2009
Lead	0.14J	μg/L	0.10	1	A Wilson	1/10/2009
Manganese	U	μg/L	0.42	1	A Wilson	1/10/2009
Selenium	U	μg/L	1.3	5	A Wilson	1/10/2009
Thallium	0.89J	μg/L	0.03	1	A Wilson	1/10/2009
Vanadium	U	μg/L	3.4	5	A Wilson	1/10/2009

TEST: Mercury METHOD: EPA 245.1						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Mercury	U	μg/L	0.13	0.2	A Wilson	1/10/2009

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

N00003972002

Project Name:

Sample Description:

KINGSTON WTP

Sampler Project Name: RAW

Project Site No.:

Station No.:

Date/Time Collected:

01/09/2009 09:55

Sampler's Name:

GEOFF KLEIN

County: Sample Matrix: ROANE - 73

Sample EFO: Water

Sampling Agency:

Knoxville TDEC-DWS

Billing Code: Send Report To: 327.39-12 TDEC-DWS

Agency Invoiced:

TDEC-DWS

Priority Date:

Date/Time Received:

01/09/2009 14:30

Received By:

L Barrociere

pH: Chlorine, residual:

Field Determinations

Chlorine, residual: Conductivity: Temperature: Dissolved Oxygen:

Other: Flow:

CFS

TEST: Digestion Metals METHOD: EPA 200.2						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Digestion Metals	01/10/2009				A Wilson	1/10/2009

TEST: ICP-MS	ME ⁻	METHOD: EPA 200.8				
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Arsenic	U	μg/L	0.93	5	A Wilson	1/10/2009
Barium	21	μg/L	2.5	5	A Wilson	1/10/2009
Beryllium	Ü	μg/L	0.11	1	A Wilson	1/10/2009
Cadmium	U	μg/L	0.41	1	A Wilson	1/10/2009
Chromium	U	μg/L	2.0	5	A Wilson	1/10/2009
Cobalt	0.3J	μg/L	0.04	1	A Wilson	1/10/2009
Lead	0.64J	μg/L	0.10	1	A Wilson	1/10/2009
Manganese	63	μg/L	0.42	1	A Wilson	1/10/2009
Selenium	U	μg/L	1.3	5	A Wilson	1/10/2009
Thallium	1.7	μg/L	0.03	1	A Wilson	1/10/2009
Vanadium	U	μg/L	3.4	5	A Wilson	1/10/2009

TEST: Mercury	ME	METHOD: EPA 245.1					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE	
Mercury	U	μg/L	0.13	0.2	A Wilson	1/10/2009	

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

N00003972003

Project Name:

Sample Description: **ROCKWOOD WTP**

Sampler Project Name: RAW

Project Site No.: Station No.:

Date/Time Collected:

01/09/2009 11:00

Sampler's Name: County:

GEOFF KLEIN

Sample Matrix:

ROANE - 73

EFO:

Water

Sampling Agency:

Knoxville **TDEC-DWS**

Billing Code: Send Report To: 327.39-12 **TDEC-DWS** TDEC-DWS

Agency Invoiced: **Priority Date:**

Date/Time Received:

01/09/2009 14:30

Received By:

L Barrociere

Field Determinations

pH:

Chlorine, residual: Conductivity: Temperature: **Dissolved Oxygen:**

Other: Flow:

CFS

TEST: Digestion Metals	MET	METHOD: EPA 200.2				
ANALYTE	RESULT	UNITS	MDL.	MQL	ANALYZED BY:	DATE
Digestion Metals	01/10/2009				A Wilson	1/10/2009

TEST: ICP-MS	MET	THOD: EPA 200	0.8			
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Arsenic	U	μg/L	0.93	5	A Wilson	1/10/2009
Barium	28	μg/L	2.5	5	A Wilson	1/10/2009
Beryllium	U	μg/L	0.11	1	A Wilson	1/10/2009
Cadmium	U	μg/L	0.41	1	A Wilson	1/10/2009
Chromium	U	μg/L	2.0	5	A Wilson	1/10/2009
Cobalt	0.13J	μg/L	0.04	1	A Wilson	1/10/2009
Lead	0.19J	μg/L	0.10	1	A Wilson	1/10/2009
Manganese	7.7	μg/L	0.42	1	A Wilson	1/10/2009
Selenium	U	μg/L	1.3	5	A Wilson	1/10/2009
Thallium	0.53J	μg/L	0.03	1	A Wilson	1/10/2009
Vanadium	U	μg/L	3.4	5	A Wilson	1/10/2009

TEST: Mercury	METHOD: EPA 245.1					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Mercury	U	μg/L	0.13	0.2	A Wilson	1/10/2009

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

N00003972004

Project Name:

Sample Description:

ROCKWOOD WTP

Sampler Project Name: FINISH

Project Site No.:

Station No.:

Date/Time Collected:

01/09/2009 11:05

Sampler's Name: County:

GEOFF KLEIN

Sample Matrix:

ROANE - 73

EFO:

Water

Sampling Agency:

Knoxville **TDEC-DWS**

Billing Code: Send Report To: 327.39-12 TDEC-DWS

Agency Invoiced:

TDEC-DWS

Priority Date:

Date/Time Received:

01/09/2009 14:30

Received By:

L Barrociere

Field Determinations pH:

Chlorine, residual: Conductivity: Temperature: **Dissolved Oxygen:**

Other: Flow:

CFS

TEST: Digestion Metals	MET	HOD: EPA 20	0.2			
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Digestion Metals	01/10/2009				A Wilson	1/10/2009

TEST: ICP-MS	ME ⁻	THOD: EPA 200	0.8			
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Arsenic	U	μg/L	0.93	5	A Wilson	1/10/2009
Barium	27	μg/L	2.5	5	A Wilson	1/10/2009
Beryllium	U	μg/L	0.11	1	A Wilson	1/10/2009
Cadmium	U	μg/L	0.41	1	A Wilson	1/10/2009
Chromium	U	μg/L	2.0	5	A Wilson	1/10/2009
Cobalt	0.07J	μg/L	0.04	1	A Wilson	1/10/2009
Lead	U	μg/L	0.10	1	A Wilson	1/10/2009
Manganese	1.2	μg/L	0.42	1	A Wilson	1/10/2009
Selenium	U	μg/L	1.3	5	A Wilson	1/10/2009
Thallium	0.29J	μg/L	0.03	1	A Wilson	1/10/2009
Vanadium	U	μg/L	3.4	5	A Wilson	1/10/2009

TEST: Mercury	ME					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Mercury	U	μg/L	0.13	0.2	A Wilson	1/10/2009

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit